

having fluorine and carbon in a molecule, chlorine or hydrogen bromide, oxygen, and nitrogen,

wherein said fluorine-containing gas has a structure that a ratio of fluorine atoms with respect to elements of the gas molecule except for fluorine is four or less when the composition of the fluorine molecule is M_xF_y , $Y/X \leq 4$ where M is an element except for fluorine atom and F is fluorine, and the total number of fluorine atoms in elements constituting said gas molecule is four or less.

4. (amended) A method of manufacturing a semiconductor apparatus comprising the steps of:

laminating upwards a polycrystal silicon film or an amorphous silicon film, a tungsten nitride film or a titanium nitride film, and a tungsten film on a silicon substrate; and

performing a dry-etching of said tungsten nitride film or said titanium nitride film and said tungsten film with only a single mixed gas containing fluorine-containing gas that includes a compound having fluorine and carbon in a molecule, chlorine or hydrogen bromide, oxygen and nitrogen so that a gate electrode is formed,

wherein said fluorine-containing gas has a structure that a ratio of fluorine atoms with respect to elements of the gas molecule except for fluorine is four or less when the composition of the fluorine molecule is M_xF_y , $Y/X \leq 4$ where M